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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,301	03/27/2001	Elwood G. Norris	T6139.NP	4054
20551	7590	06/17/2004	EXAMINER	
THORPE NORTH & WESTERN, LLP. 8180 SOUTH 700 EAST, SUITE 200 P.O. BOX 1219 SANDY, UT 84070			LE, HUYEN D	
			ART UNIT	PAPER NUMBER
			2643	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/819,301

Applicant(s)

NORRIS ET AL.

Examiner

HUYEN D. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 13, 14, 17-24, 27, 28 and 30 is/are rejected.
- 7) ☒ Claim(s) 2-12, 15-16, 25-26 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/23/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: the first and second faces 12 and 13 on pages 6-9 in the specification are not corresponded to the first and second faces 12 and 13 in the drawings. As best understood from the specification, the membrane (20) is positioned in direct contact with the first face (12) at the small throat opening (31) of the horn (30).

On pages 6-9 in the specification, the reference number 12 is labeled as the first and second faces and the reference number 13 is also labeled as the first and second faces.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. Claims 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear the dependency of claim 17.

3. Claim 16 recites the limitation "said back plate" in claim 16. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 27 rejected under 35 U.S.C. 102(b) as being anticipated by Massa (U.S. patent 4,297,538).

Massa teaches a method for developing a high efficiency acoustic coupling device for coupling ultrasonic emitters to a surrounding air environment (figure 7). The method comprises the step of attaching an emitter membrane (7) at a small throat opening of an acoustic horn (16), applying sonic frequencies to the emitter membrane (col. 3, lines 1-13), and propagating the sonic compression wave through the acoustic horn as claimed (see figure 7 and col. 1, lines 15-22).

6. Claims 1, 19 and 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Grunberg (U.S. patent 6,744,899).

Regarding claims 1, 19 and 21-22, Grunberg teaches a sonic emitter array which comprises a plate support member (95, 130) having first and second faces and an intermediate plate body (figures 12, 14), an emitter membrane (108, 146), and biasing means and means for

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applying a sonic frequency as claimed (see the magnetic circuit and the voice coil in figures 7 and 12). As shown in figures 12 and 14, the plate support member (95, 130) has a plurality of conduits that are configured as an array of acoustic horns. Each horn has a small throat opening and an intermediate horn section which diverges to a broad mouth opening at the second face as claimed.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 13-14, 20, 23-24, 27-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grunberg (U.S. patent 6,744,899).

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Regarding claims 13 and 14, Grunberg does not specifically teach the material for the diaphragm as claimed. However, providing different types of loudspeaker coupled to an acoustic horn is very well known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any type of speaker for the acoustic horn of Grunberg such as the type of the speaker which includes PVDF material for the membrane and a voltage source coupling to the PVDF membrane for greater application.

Regarding claim 20, Grunberg does not specifically teach a diameter of the emitter array of the plate support member as claimed. However, Grunberg does not restrict to any size of the plate support member; it therefore would have been obvious to one skilled in the art to provide any size for emitter array of the plate support member of Grunberg such as the diameter of at least three inches depending the size of the different types of loudspeakers.

Regarding claims 23 and 24, Grunberg does not specifically teach the ultrasonic frequencies as claimed. However, providing different audio sources to the loudspeaker is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide different audio sources in different frequency ranges of the Grunberg device such as the ultrasonic frequencies for an alternate choice.

Regarding claims 27-28 and 30, Grunberg teaches a method for developing a high efficiency acoustic coupling which comprises the steps as claimed in claims 27-28 (also see paragraph 6 in this Office Action).

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Grunberg does not specifically teach the ultrasonic frequencies as claimed. However, providing different audio sources to the loudspeaker is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide different audio sources in different frequency ranges of the Grunberg device such as the ultrasonic frequencies for an alternate choice.

***Allowable Subject Matter***

9. Claims 2-12, 15, 25-26 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kawakami et al. (U.S. patent 3,908,098) teaches an electrostatic transducer.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (703)305-4844. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL  
June 10, 2004

  
**HUYEN LE**  
**PRIMARY EXAMINER**